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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,359	12/29/1999	JEFF C. MORRISS	INTL-0294-US	2154

7590

04/30/2003

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EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 04/30/2003

B

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/474,359

Applicant(s)

MORRISS, JEFF C.

Examiner

Kevin Y Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-9, 12-15 and 19-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-27 is/are allowed.
- 6) ☒ Claim(s) 7-9, 13-15, 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 7-9,13-15,19 have been considered but are not persuasive.

In traversing the rejection of claims 7-9, applicant points out that the  $V_{\text{CTRL}}$  is a voltage signal and thus is not a signal that has a duty cycle proportional to a phase difference. This observation is correct. However, the teaching that was relied on from the Dabral patent was not the control signal  $V_{\text{CTRL}}$ . Rather it was the comparison signal output from the phase comparator (48), which is clearly described as "a duty cycle-modulated signal" at col.5, lines 49-53. See page 3 of the last Office action. Applicant next challenges the *prima facie* case of obviousness was not established and requests a reference to support the Examiner's position. As explained in the last Office action, the details of the control signal from the phase comparator in the primary reference, i.e., the Tamura et al patent, are not described since it is transparent to the invention of the patent. One skilled in the art would have obviously searched for and relied on known methods of constructing the phase comparator. The examiner provided one such prior art phase comparator that produces a comparison signal where the duty cycle indicates the phase difference, as one alternative in the last Office action. Thus the proposed combination of the references would have been obvious to one skilled in the art to complete the invention of the Tamura et al patent. Applicant's arguments failed to address such combination. It is well settled that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). For reasons above,

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a *prima facie* case of obviousness is believed to have been established with the cited references alone and no further references are needed.

Since the rejection of claims 13-15 and 19 are traversed for the same ground as those for claims 7-9, the response as given above is identically applied to claims 13-15 and 19.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 7-9, 13-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al in view of Sharman et al (U.S. Patent No. 5,736,872) and Dabral (U.S. Patent No. 5,973,526).

Consider claims 7,13. Referring to Figs. 11 and 14, Tamura et al discloses a data receiver comprising data buffers (541 –543), “a first circuit” (5301) generating a skew-indicating signal between data and strobe and “a second circuit” (5302,5304) for latching data into the buffers. And yet Tamura et al is silent on the characteristics of the control signal indicating the skew between the data and clock signals. It simply shows a control signal from the phase comparator to the dotted box representing a delay chain circuit. In other words, the patent failed to expressly teach exactly how the output of the comparator controls the delay of the clock signal. Further, considering that all phase detectors produce an output signal proportional in magnitude or duty cycle, as established by Sharman et al at col.6, ll.25-28, and Tamura et al does not exclude either type, a phase detector producing a square wave signal whose duty cycle indicates the skew between the two inputs would have been one of two possible options. Furthermore, Debral

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teaches using the duty-cycle modulated signal to control variable delay circuit. See col.4, ll. 48-55 and Fig.5. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a phase comparator that produces a pulse train whose duty cycle indicates the skew of two inputs, as taught by Dabral, as an actual implementation of the phase comparator of Tamural et al because such a phase comparator is one of two well known phase comparators as evidenced by Sharman.

Regarding claim 8 calling for registers, see UP-Down Counter connected to the phase comparator in Fig. 52.

Regarding claim 9 reciting a delay chain and multiplexing circuitry, see the delay chains (5302, 5304) and col.19, ll.16-20.

Regarding claims 14 and 15 the use of an up/down counter that stores "a calibration value" indicative of phase difference between two signals to a phase comparator for delaying the strobe signal is shown in Fig. 52.

Regarding claim 19, data in the latches are known to represent "a predetermined data pattern."

***Allowable Subject Matter***

4. Claims 20-27 are allowed.
5. Claims 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

kvk  
April 24, 2003

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**